

Name: _____

Algebra 2 CC Q1 Review for Quarter Test

SHOW ALL WORK ON SEPARATE PAPER! Be sure to review your old notes and tests as well.

1) Simplify: $\frac{\sqrt{75}}{\sqrt{3}}$

A) 25

B) 5

C) $\frac{5\sqrt{3}}{3}$

D) $5\sqrt{3}$

2) Simplify: $2\sqrt{3}(3\sqrt{6} - 3\sqrt{3})$

A) 18

B) $12\sqrt{3} - 18$

C) $18\sqrt{2} - 18$

D) $3\sqrt{6} - 6\sqrt{3}$

3) What is the sum of $\frac{5}{3}x^2 - \frac{8}{5}x + \frac{7}{8}$ and $-\frac{3}{5}x^2 - \frac{1}{2}x + \frac{1}{4}$?

A) $x^2 - \frac{9}{7}x + \frac{2}{3}$

C) $\frac{2}{15}x^2 - \frac{9}{10}x + 1$

B) $\frac{8}{15}x^2 - \frac{9}{10}x + 2$

D) $\frac{16}{15}x^2 - \frac{21}{10}x + \frac{9}{8}$

4) What is the product of $(2 + a)$ and $(3 - b)$?

A) $6 - ab$

C) $6 + ab - b^2$

B) $6 - 2b + 3a - ab$

D) $5 + ab + 3a - 2b$

5) If $(\sqrt{18} + \sqrt{2})$ is divided by $\sqrt{2}$, the result is

A) 4

B) 16

C) $\sqrt{10}$

D) 3

6) Which of the following correctly shows the factoring of $x^3 + 27$?

A) $(x + 3)(x^2 + 3x - 9)$

C) $(x + 3)(x + 3)(x + 3)$

B) $(x + 3)(x^2 - 3x + 9)$

D) $(x + 3)(x - 3)(x - 3)$

- 7) What is the quotient when $x^3 - 2x^2 - 9$ is divided by $x - 3$?
- A) $x^2 - x - 6$ B) $x^2 + x - 6$ C) $x^2 - 5x + 6$ D) $x^2 + x + 3$
- 8) Simplify: $(\frac{x^2 - 4}{10x})(\frac{5x^2}{x^2 + 2x})$
- A) $x - 1$ B) $\frac{x - 2}{2x}$ C) $\frac{x - 2}{2}$ D) $\frac{x + 2}{2x}$
- 9) For which value(s) of x is the function $f(x) = \frac{x^2 - 9}{x - 7}$ undefined?
- A) 3, only B) 9 C) 3 and -3 D) 7
- 10) Simplify: $(7 - x\sqrt{x})^2$
- A) $49 - 14x\sqrt{x} + x^3$ C) $49 - 14x\sqrt{x} + x^2$
 B) $9 - 7x\sqrt{x} + x^3$ D) $49 - x^3$
- 11) Simplify: $6\sqrt{54} - 3\sqrt{24} - 8\sqrt{96}$
- A) $-8\sqrt{6}$ C) $-20\sqrt{6}$
 B) $10\sqrt{6}$ D) $3\sqrt{30} - 8\sqrt{6}$
- 12) Simplify: $\sqrt{72}$
- 13) Combine and simplify: $6\sqrt{20} - 2\sqrt{80}$
- 14) Combine and simplify: $2\sqrt{18x^2} + 3x\sqrt{2}$
- 15) Simplify: $(6x^2 + 11x - 10) \div (2x + 5)$

16) Simplify: $\frac{12}{3\sqrt{8}}$

17) Write an expression to represent $ax - ay - bx + by$ when factored completely.

18) Write an expression to represent $4x^2 - 9$ when factored completely.

19) Simplify: $\sqrt[3]{54}$

20) What is the quotient when $(t^4 - 3t^3 + t^2 + 6t - 2)$ is divided by $(t^2 + 2)$?

21) Simplify: $\frac{-5}{3-a} \div \frac{10}{a-3}$